RECEIVED
CENTRAL FAX CENTER
JUL 16 2008

REMARKS/ARGUMENTS

Reconsideration is requested in view of the foregoing claim revisions and following remarks. Independent claims 1, 12 and 22 have been editorially revised to more precisely and accurately claim what applicant regards as the invention. Support for the above claim revision can be found in paragraphs [0016] - [0018], [0020]-[0021] and Figure 3, among other places. Claims 2, 3 and 8 have been editorially revised for consistency with claim 1, from which these claims depend. Claims 15 and 18 have been editorially revised for consistency with claim 12, from which these claims depend. Claims 1-3, 5, 8, 9, 12 and 15-22 remain under consideration in the present application.

Objections to the Specification

The specification is objected to as failing to provide proper antecedent basis for the DPCM as recited in claims 1 and 12. Claims 1 and 12 have been editorially revised to recite that a wavelet transformation results in a spatially transformed representation having a second resolution lower than a first resolution. This objection is therefore overcome, and the objection should be withdrawn.

Claim Rejections – 35 USC §103

Claims 1-2, 5, 8-9, 12-16, 18 and 22 stand rejected under 35 U.S.C. §103(a) as unpatentable over Li et al. (US 6,567,081) in view of Gu et al. (US 7,006,568). Applicant respectfully traverses this rejection.

Claim 1 is directed to a method of processing image data comprising:

receiving data indicative of a group of consecutive cross sectional images of a three dimensional volume being imaged, each of the cross sectional images being perpendicular to a z-axis, the group of consecutive cross sectional images having a first axial resolution in a z-axis direction and having a first spatial resolution in x-axis and y-axis directions orthogonal to the z-axis;

dividing the data into a plurality of subsets of data, each subset of data representing a thick slab comprising a desired common number of adjacent image slices with corresponding consecutive cross sectional images;

performing a wavelet transform on at least one thick slab representation in the z-axis direction to generate an axially transformed representation of at least one thick slab having a second axial resolution lower than the first axial resolution such that the at least one thick slab represents an average of all composite slices forming the at least one thick slab; and

performing a wavelet transform on the at least one axially transformed representation of a thick slab in x-axis and y-axis directions to generate a spatially transformed representation of the axially transformed representation of the at least one thick slab, the spatially transformed representation having a second spatial resolution lower than the first spatial resolution.

None of the cited art, alone or in combination teaches or suggests dividing the data into a plurality of subsets of data, each subset of data representing a thick slab comprising a desired common number of adjacent image slices with corresponding consecutive cross sectional images, and performing a wavelet transform on at least one thick slab representation in the z-axis direction to generate an axially transformed representation of at least one thick slab having a second axial resolution lower than the first axial resolution such that the at least one thick slab represents an average of all composite slices forming the at least one thick slab as required by claim 1.

The claimed thick slab representation allows a thick slab to be generated while decompressing the compressed information, thus requiring less computational overhead and allowing higher speed viewing than conventional 3D wavelet transform methods such as disclosed Li et al. and Gu et al. that requires decoding of all the frames, and then averaging the frames to produce a thick slab. By first providing a thick slab representation from a subset of individual slices such as recited in claim 1, less data than

would normally be required with conventional methods such as disclosed in the cited art is needed for decompression if a viewer is satisfied with the initial thick slab representation.

For at least these reasons, claim 1 is patentable over Li et al., alone or in combination with Gu et al. Claims 2, 5 and 8-9 are patentable through their dependency from claim 1 that is allowable. Applicants do not concede the correctness of the rejection or the relevance of the cited art as to the remaining claim features.

Independent claims 12 and 22 are also patentable over the cited art since the patentable features of these claims correspond to the patentable features of claim 1. Claims 13-16 and 18 are patentable through their dependency from claim 12 that is allowable. Applicants do not concede the correctness of the rejection or the relevance of the cited art as to the remaining claim features.

Claims 3, 20 and 21 stand rejected under 35 U.S.C. §103(a), as unpatentable over Li et al., Gu et al. and Dekel (US 2003/0005140). Applicant respectfully traverses this rejection for at least the same reasons discussed above regarding claims 1 and 12.

Claim 3 is patentable over the cited art through its dependency from claim 1 that is allowable. Dekel does not remedy the deficiencies of Li et al. alone or in combination with Gu et al. that fail to teach or suggest dividing the data into a plurality of subsets of data, each subset of data representing a thick slab comprising a desired common number of adjacent image slices with corresponding consecutive cross sectional images, and performing a wavelet transform on at least one thick slab representation in the z-axis direction to generate an axially transformed representation of the at least one thick slab having a second axial resolution lower than the first axial resolution such that the at least one thick slab represents an average of all composite slices forming the at least one thick slab as required by claim 1. Although Dekel does teach performing 2D sub-band transform decompositions in x-axis and y-axis directions and performing 1D sub-band

transform decompositions in a z-axis direction, nowhere does Dekel teach or suggest dividing the data into a plurality of subsets of data, each subset of data representing a thick slab comprising a desired common number of adjacent image slices with corresponding consecutive cross sectional images, and performing a wavelet transform on at least one thick slab representation in the z-axis direction to generate an axially transformed representation of the at least one thick slab having a second axial resolution lower than the first axial resolution such that the at least one thick slab represents an average of all composite slices forming the at least one thick slab as required by claim 1.

Applicant does not concede the correctness of the rejection or the relevance of the cited art to the remaining claim features.

Claims 20 and 21 are patentable over the cited art through their dependency from claim 12 that is allowable. Dekel does not remedy the deficiencies of Li et al. alone or in combination with Gu et al. that fail to teach or suggest dividing the data into a plurality of subsets of data, each subset of data representing a thick slab comprising a desired common number of adjacent image slices with corresponding consecutive cross sectional images, and transforming, in one dimension, a plurality of the images in a z-axis direction to generate a first transformed representation of at least one thick slab, wherein the transforming in one dimension comprises performing at least one level of wavelet decomposition such that the at least one thick slab represents an average of all composite slices forming the at least one thick slab as required by claim 12.

Although Dekel does teach performing 2D sub-band transform decompositions in x-axis and y-axis directions and performing 1D sub-band transform decompositions in a z-axis direction, nowhere does Dekel teach or suggest dividing the data into a plurality of subsets of data, each subset of data representing a thick slab comprising a desired common number of adjacent image slices with corresponding consecutive cross sectional images, and transforming, in one dimension, a plurality of the images in a z-axis direction to generate a first transformed representation of at least one thick slab, wherein the

RECEIVED
CENTRAL FAX CENTER
JUL 1 6 2008

transforming in one dimension comprises performing at least one level of wavelet decomposition such that the at least one thick slab represents an average of all composite slices forming the at least one thick as required by claim 12.

Applicant does not concede the correctness of the rejections or the relevance of the cited art to the remaining claim features.

Claims 17 and 19 stand rejected under 35 U.S.C. §103(a), as unpatentable over Li et al. and Gu et al. in view of common knowledge. Applicant respectfully traverses this rejection for at least the same reasons discussed above regarding claims 1 and 12.

Claims 17 and 19 are patentable through their dependency from claim 12 that is allowable. Applicants do not concede the correctness of the rejection or the relevance of the cited art as to the remaining claim features.

Favorable reconsideration in the form of a Notice of Allowance is requested. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at (507) 351-4450.

006147
PATENT TRADEMARK OFFICE

Respectfully submitted,

Dated: July 16, 2008

By: Dwight N. Holmbo
Dwight N. Holmbo
Reg. No. 36,410
1000 Fairway Drive SE
New Prague, MN 56071
507.351.4450

DNH/dnh